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Educational Inequalities in Twenty Virginia Counties

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CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

We are told that education is our only salvation in a postwar world. If this be true, then no barrier should prevent the individual from achieving as much as his ability will allow. We have been convinced that the American youth were not educated for war, and are not being educated adequately for peace. The recent emphasis on the principle of equal educational opportunites has brought many problems. The gap between our best and poorest schools is very wide. Many children are housed in dilapidated buildings with poorly prepared teachers, others are fortunate in having safe, clean, and beautiful buildings for their environment with the best of trained teachers. Our nation does not wish to deny its youth opportunities, but we have given them on an unequal basis.

The length of the school term varies from seven and one-half to ten months a year. Some states spend $6000 a year per classroom unit while others spend less than $100;[1] illiteracy ranges from 4% in one state to 36% in another;[2] rejections for selective service due to educational deficiency is 2% in one state as compared with 12% in another.[3]

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1. F. L. Schlagle, Our Children Must Be Educated, The Journal of the N. E. A., April 1945, p. 76.
2. Ibid.
3. Ibid.

The public schools are a living force for our democratic way of life. An intelligent America depends upon her public school system. Equality of educational opportunity cannot be approached through any other medium. If class and caste are ever forgotten it probably will be through the public schools. A greater part of our children either must be educated at public expense or remain in ignorance. Many families cannot afford to educate their children privately, and others would not; therefore, it is the responsibility of the American public to educate youth for a richer life by eliminating some of the barriers that prevent equality of opportunity.

Statement of the Problem

A recent state wide testing program[4] in Virginia involving seventh grade children revealed many inequalities in educational achievement. The grade level for grade seven ranged from 5.2 to 7.8, a difference of 2.5 years. It is the purpose of this investigation to inquire into the possible causes of these inequalities. The factors considered as possible causes are as follows: (1) amount of wealth per child, (2) length of school day, (3) amount of supervision, (4) cost of instruction, (5) average annual salaries of teachers, (6) value of school property, (7) per cent of

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4. Charles E. Myers, Achievement of Virginia Pupils, State Board of Education, Richmond, 1943.

teacher turn-over, (8) number of parent-teacher associations, (9) size of county unit, and (10) certification of teachers.

Source of the Data

Data used as a basis for this study were obtained from the Annual Reports of the Superintendent of Public Instruction; from the records of J. L. B. Buck, Director of Teacher Training; from Achievement of Virginia Pupils by Charles Everett Myers,[5] Supervisor of Research; and from a questionnaire mailed to the superintendents of the counties involved in this study.

Twenty counties were selected for study, the ten counties having the highest grade level and the ten counties having the lowest grade level. Various comparisons were made between the two groups in terms of averages for the factors studied. On the basis of differences in these averages between the two groups, certain conclusions are drawn as to the relative efficiency of the educational program of the two groups. Later, differences in factors which might possibly account for these differences are studied.

Definition of Terms

In order that there may be no basis for misunderstanding, certain terms used in this study are here defined:

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5. Charles E. Myers, Achievement of Virginia Pupils, State Board of Education, Richmond, 1943.

1. Age-grade status as used in this study refers to the variations in age that occur at the grade level.
2. Educational age as used in this study refers to specific in-school learning of the 3-R type.
3. Grade level as used in this study means the highest level reached in educational age.
4. Group I as used in this study refers to the ten counties with the highest grade level.
5. Group II as used in this study refers to the ten counties with the lowest grade level.
6. Norm as used in this study refers to the median score of the total number of children tested.

Significant Studies in the Field

Several comparative studies have been made in this field. The most significant is the one by Ayres[6] in which he uses the following ten factors as a basis of comparison: (a) per cent of school population attending school daily, (b) average days attended by each child of school age, (c) average number of days schools are kept open, (d) per cent that high school attendance was of total attendance, (e) per cent that boys were of girls in high schools, (f) average expenditure per child in average attendance, (g) average expenditure per child of school age, (h) average expenditure

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6. L. P. Ayres, An Index Number for State School Systems, The Russell Sage Foundation, 1920.

per teacher employed, (i) expenditure per pupil for purposes other than teachers' salaries, and (j) expenditure per teacher employed for salaries.

Ayres concludes his study with the following statement: "This volume presents an index number for measuring the effectiveness of state school systems. It is a composite of 10 different elements, of which five are measures of the amount of education received by the children, and the remaining five are measures of the expenditure made to purchase this education.----The purpose of the index number is to make it possible for state school systems to measure their progress from year to year and to compare their attainments with those of their neighbors."

Sandiford[7] in a comparative study of educational practices in different countries reaches the conclusion that an educational system is something more than imparting knowledge. In his study he analyzes the differences in six countries by using the following main factors: (a) diversity of education, (b) the development of education, (c) the control of education, (d) elementary education, (e) secondary education, and (f) the tendencies to equalize educational opportunities. In the field of elementary education, he

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7. Peter Sandiford, Comparative Education, E. P. Dutton and Company, New York, 1918.

makes a comparative study of the following factors: (a) attendance, (b) average number of days school was kept open, (c) compulsory attendance regulations, (d) program of studies, (e) cost per pupil in attendance, (f) certification of teachers, and (g) average salaries paid teachers.

Bursch[8] in studying the problem of school truancy concludes with the following main causes: (a) lack of home control, (b) lack of interest in school work, (c) mental or emotional instability, (d) influence of street gangs, (e) poor economic conditions in the home, (f) marital difficulties in the home, (g) parents defiant of school laws, and (h) the dislike for teacher or school subject.

Baker[9] persents in his study of behavior-problem children sixty-six items for appraising their problems. Only three are related to this study: (a) intelligence, (b) school attendance, and (c) scholarship.

Inglis[10] in his public school survey in 1919 recommended the following imperative needs for Virginia schools: (a) an effective compulsory attendance law, (b) better trained teachers, (c) improvements in educational program,

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8. James F. Bursch, Factors Associated with Non-Attendance, Bulletin of the Department of Secondary School Principals, March 1936, p. 31.
9. Baker and Traphagen, The Diagnosis and Treatment of Behavior-Problem Children, The Macmillan Company, 1935.
10. Alexander J. Inglis, Director, Virginia School Survey Everett Waddey Company, 1919.

(d) an increase in consolidation, (e) better supervision must be provided, (f) financial support of public schools must be greatly increased, (g) methods of raising and distributing school funds must be changed, and (h) the school term must be lengthened.

O'Shea[11] in a similar study in 1928 made the following criticisms of Virginia public schools: (a) improvement in rural education, (b) better trained teachers, (c) pupils are not classified according to ability, (d) supervision can and should be improved, (e) the textbooks are not adapted to needs in Virginia, (f) increased revenue for schools, and (g) the teacher turn-over in Virginia is very rapid.

The most recent survey was the one authorized by the General Assembly of Virginia in its regular session of 1944. The Virginia Education Commission[12] was organized to make a thorough and complete study of the public school system. Some of the criticisms expressed by the public were as follows: (a) dissatisfaction with the present standing of Virginia public schools, (b) the schools are too far removed from the people, (c) the schools are not doing a satisfactory job in teaching the fundamental skills, (d) that vocational

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11. M. V. O'Shea, Public Education in Virginia, Davis Bottom, 1928.
12. Report of the Virginia Education Commission, Division of Purchase and Printing, Richmond, 1944.

education be given a larger place in the system, (e) that the low salaries paid teachers do not attract the superior talent into the profession, (f) that a more adequate health program be developed, (g) that the homes are not reinforcing the work of the schools, (h) that the present method of distributing State funds among the localities does not operate effectively, (i) that the compulsory school laws be more rigidly enforced, and (j) that the people are willing to pay for schools if they can get the results.

The Commission gave the following report on rural and urban inequalities:

In spite of the fact that in recent years the annual value of manufactured products in Virginia far exceeds that of farm products, the State is still a predominantly rural one. About nine-tenths of the land area of Virginia is rural, and almost two-thirds of the population. Besides, because of the higher birth rates, the rural areas are the nursery of the future population, not only of the country but also to a considerable extent of the cities. With relatively more children in the country and fewer adults in the most productive years of life to provide for them, the rural educational burden is relatively much greater than that of the city. Moreover, the true value of locally taxable wealth per pupil in average daily attendance in the rural areas is about $6,000 in contrast to the corresponding figure of some $11,000 per urban pupil. The salaries of rural reachers average significantly less than those of urban teachers; in 1942-1943, the average figure for rural teachers was $887, while for those in the cities the average was $1,474. Also, the average per pupil expenditures in Virginia cities are very much higher than in the counties.

These data all give point to the statement that the biggest part of the public school problem of Virginia is in the rural areas. It is true that the urban schools in Virginia have a long way to go in their adequate improvement,

yet, if the country schools of the State were up to the standards prevailing in most of the cities, there would be much less cause for dissatisfaction than exists with regard to the public school system of the Commonwealth. The Commission feels that this contrasting situation should have a large place in any thought and planning aimed at the improvement of the public schools of the State.

Statement of Organization

The remaining portion of this study is organized as follows: Chapter II describes in detail the testing program in Virginia, explains the relation of groups for study, and presents data to point out the inequalities that were discovered as a result of the testing program. The following factors are considered: (a) the chronological age of the pupils, (b) the educational age of the pupils, (c) the ability to interpret the meaning of paragraphs, (d) the ability to understand the meaning of words, (e) the average reading ability, (f) the scores on the Otis Quick-Scoring Mental Ability Test, and (g) the average daily attendance.

Chapter III presents the data to indicate the possible causes of the inequalities. The following factors are considered: (a) the amount of wealth per child, (b) the length of the school day, (c) the period of supervision, (d) the cost of instruction, (e) the average annual salaries of teachers, (f) the value of school property per child, (g) per cent of teacher turn-over, (h) number of parent-teacher associations, (i) the size of the county units, and (j) the certification of teachers.

Chapter IV summarizes the findings of the study and arrives at certain conclusions.

CHAPTER II

THE RESULTS OF GOOD AND POOR ACHIEVEMENT

The Testing Program In Virginia

"Virginia has been a pioneer in the use of standardized tests to secure objective, reliable and valid measures of pupil learning. The Inglis Survey of the public schools in Virginia in 1918-1919 made use of these new measuring devices then being created. Between 1929-1934, the State Department of Education provided and supervised the use of hundreds of thousands of standard tests in a comprehensive study of "The Effects of Educational Practices upon Pupil Learning." In May 1943, the Otis Classification Test was used on a state-wide basis in the 7th grade and this general test was followed in December 1943 by the Stanford Achievement Test which gives separate scores in ten different subjects.

The many suggestions for promising changes in school practice offered by these studies should be put to work or else submitted to experimental demonstration. The questions of: attendance, length of term, teacher assignment, class size, retardation, elimination, school offering, superivison of instruction and teacher salaries are among those which have been studied in relation to pupil learning. Adequate use has not been made of the results. The data

available (unchallenged by contrary data) on the four-sided problem of attendance, term length, number of pupils per teacher, costs, related to pupil learning, condemn our present school organization and practices as ineffective and grossly wasteful in time, effort and cost. If professional opinion and public mandate make the general use of such data unwise or impossible, it might be well to create and operate a school division to try out such promising changes on an experimental-demonstration basis. It should result not only in a much better education for the pupils of the experimental unit but it should also standardize effective educational practices for use in all the schools."[1]

The tests, on which this study is based, were given on the same date and as nearly as possible under normal conditions. They were administered by the school principals and teachers who had been given special instruction and directions in regard to making satisfactory arrangements for the testing program, in addition to the printed information accompaning the tests. The papers were checked carefully by principals and teachers and all records completed according to instructions. These records were sent to the division superintendents who forwarded them to the State Department of Education for a complete tabulation on a state-wide basis.

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1. Charles E. Myers, Achievement of Virginia Pupils, State Board of Education, Richmond, 1943.

The Selection of Counties in this Study

Table 1 shows the grade level for 97 counties tabulated in the testing program. For a comparative study, the ten counties having the highest grade level were chosen for Group I, and the ten counties with the lowest grade level were chosen for Group II.

In Group I, with six counties having a grade level of 7.0, the three counties having the largest number of pupils tested were selected. The grade level was obtained from the Profile Chart in the Stanford Achievement Test.

TABLE 1

Grade Level for Seventh Grade Children in Ninety-Seven Counties Tested in Virginia

Grade Level	Number of Counties
7.8	1
7.6	1
7.4	1
7.2	4
7.0	6
6.8	15
6.6	13
6.4	17
6.2	9
6.0	12
5.9	8
5.8	7
5.5	1
5.4	1
5.2	1
6.4 Median	97

TABLE 2

Average Chronological Age for Groups I and II

Group I	Ch. Age	Group II	Ch. Age
*A	13-10	K	13-1
B	13-4	L	13-6
C	13-5	M	13-2
D	13-5	N	13-7
E	13-3	O	13-4
F	13-7	P	13-5
G	13-7	Q	13-0
H	13-5	R	13-2
I	13-6	S	13-7
J	13-1	T	13-3
Average	13-5		13-4

Table 2 shows the average chronological ages of the two groups. The range in Group I is from thirteen years and ten months to thirteen years and one month, or a difference of nine months. The range in Group II is from thirteen years and seven months to thirteen years and zero months, or a difference of seven months. The range between groups I and II is ten months. The average chronological difference between the two groups is one month. Chronologically speaking, the two groups have practically the same age. The average in the above table was figured to the nearest whole month.

* Letters refer to counties.

TABLE 3

Average Educational Age for Groups I and II

Group I	Ed. Age	Group II	Ed. Age
A	12-10	K	10-3
B	12-8	L	10-5
C	12-5	M	10-6
D	12-2	N	10-10
E	12-2	O	10-10
F	12-0	P	10-10
G	12-0	Q	10-10
H	12-0	R	10-10
I	12-0	S	10-10
J	12-0	T	10-10
Average	12-3		10-8

Table 3 shows that there is a wide range in the educational age of the two groups. Group I has a range of ten months; Group II, seven months; from the highest in Group I to highest in Group II, twenty-four months; and from the highest in Group I to lowest in Group II, thirty-one months. The average range difference is nineteen months. This is an important factor in this study since the two groups have practically the same chronological age. Since Group II has the smaller range, it is probably due to the number of pupils in the groups. There are 1748 pupils in Group I and 857 in Group II.

TABLE 4

Average Grade Level for Groups I and II

Group I	Grade Level	Group II	Grade Level
A	7.8	K	5.2
B	7.6	L	5.4
C	7.4	M	5.5
D	7.2	N	5.8
E	7.2	O	5.8
F	7.0	P	5.8
G	7.0	Q	5.8
H	7.0	R	5.8
I	7.0	S	5.8
J	7.0	T	5.8
Average	7.22		5.67

Referring to Table 1, the median grade level for the State is 6.4. Therefore, all the counties in this study are above or below the median. There is a difference of thirty months from the highest in Group I to the lowest in Group II. The average difference in the two groups is seventeen and a half months. The counties in Group I are .78 below the norm at testing time and Group II is 1.63 below norm. The norm in this study is established by the fact that the tests were given in the third month of the seventh year. Expressing it differently, the pupils in Group II are seventeen and a half months behind Group I in achievement.

TABLE 5

Age Equivalent in Paragraph Meaning on the Reading Test

Group I	Par. Meaning	Group II	Par. Meaning
A	12-5	K	9-11
B	13-1	L	10-5
C	12-0	M	10-6
D	10-10	N	10-8
E	12-0	O	10-8
F	11-3	P	10-11
G	11-5	Q	10-10
H	11-10	R	10-10
I	12-0	S	10-5
J	11-10	T	10-8
Average	12-2		10-6

An examination of Table 5 shows that there is a wide range in the paragraph meaning of the two groups. Group I is superior to Group II by twenty months. The average for the State is eleven years, three months (19,386 pupils tested). Therefore, Group I is eleven months above the average and Group II is nine months below average. One county in Group I fell below the average and not one county in Group II reached or exceeded the average for the State.

TABLE 6

Age Equivalent in Word Meaning on the Reading Test

Group I	Word Meaning	Group II	Word Meaning
A	12-5	K	10-6
B	13-1	L	10-11
C	12-5	M	11-0
D	11-3	N	11-5
E	12-2	O	10-11
F	12-0	P	11-3
G	11-7	Q	11-3
H	12-0	R	11-0
I	11-10	S	11-0
J	12-2	T	11-3
Average	12-1		11-0

Table 6 shows the average age equivalent scored on the second part of the Reading Test- word meaning. The average for the State is eleven years and seven months; therefore, Group I is six months above the State average and Group II is seven months below the State Average. The difference in the average of the two groups is thirteen months. No county in Group I fell below the State average, and no county in Group II equaled or exceeded the State average.

TABLE 7

Average Reading Age Based on Paragraph Meaning Plus Word Meaning

Group I	Ave. Reading	Group II	Ave. Reading
A	12-5	K	10-3
B	13-1	L	10-8
C	12-2	M	10-10
D	10-11	N	11-0
E	12-2	O	10-10
F	11-7	P	11-0
G	11-7	Q	10-11
H	11-10	R	10-11
I	11-10	S	10-8
J	12-0	T	10-11
Average	11-10		10-8

Table 7 shows that there is a wide range in the average reading ability between the two groups. Group I is five months above the State average of eleven years and five months, and Group II is nine months below the State average. The difference between the two groups is fourteen months. One county in Group I fell below the State average and no county in Group II equaled the State average. The reading scores, since they are the most important, are the only subject scores given in this study.

TABLE 8

Average Mental Ability Scored on the Otis Quick-Scoring Mental Ability Test, Beta Test: Form A

Group I	Otis	Group II	Otis
A	13-0	K	9-7
B	14-2	L	10-3
C	11-8	M	10-8
D	11-0	N	11-2
E	12-10	O	11-4
F	13-8	P	11-0
G	11-10	Q	11-0
H	12-10	R	10-7
I	13-3	S	10-10
J	12-5	T	11-4
Average	12-7		10-8

Table 8 shows the average mental ability of the two groups. The purpose of this test was to measure the degree of maturity of the mind. It is impossible to measure mental ability directly, but it is possible to measure the effect mental ability has in enabling pupils to acquire certain knowledge. If a pupil has grown up with limited educational opportunities, his mental ability is not fairly measured; but, if the children in different school systems

have approximately the same educational opportunities, then it is reasonable to assume that the children with the greater mental ability will progress more rapidly.

The twenty-three months difference in the mental ages of the two groups does not prove that Group I possesses more mental ability than Group II, but it is reasonable to assume that the children in Group II have been deprived of equal educational opportunities.

TABLE 9

Average Daily Membership and Average Daily Attendance for All Elementary Children from 1938-1943

Group I	A.D.M.	A.D.A	Group II	A.D.M.	A.D.A.
A	3096	2875	K	2376	2002
B	21561	20943	L	3172	2790
C	15704	13941	M	2729	2530
D	7185	6291	N	4605	4430
E	12030	10766	O	4432	4239
F	6558	5660	P	3847	3446
G	17540	15408	Q	3409	3158
H	5783	5189	R	2196	1901
I	7436	6741	S	9722	8551
J	5755	5280	T	4872	4274
	102648	93094		41360	37321

Nonattendance probably constitutes our greatest educational waste. Myers[1] reports that thirty-two per cent of the school census children were absent from school during the 1942-1943 session. The total attendance per pupil in 1942-1943 in Virginia was 118 days, while the schools were open 180 days. A large number of these absences are illegal. Fifty-five per cent of the superintendents in Group I, in a reply to the questionnaire, reported that the Virginia

1. Report of the Virginia Education Commission, Division of Purchase and Printing, Richmond, 1944.

compulsory school law was not enforced in the counties, and sixty per cent in Group II made the same statement.

Table 9 shows the average daily membership and the average daily attendance for a five year period for the two groups. The percentage of average daily attendance for Group I is 90.7 per cent and 90.2 per cent for Group II. Since 71 per cent of the children enrolled are in Group I, these counties have a better record than the .5 per cent difference would indicate. Group I, having approximately 12,000 more children per year enrolled, necessarily would require a greater effort in attendance. Approximately 2800 of the children in the two groups were absent from school daily. The financial loss to the counties from State appropriations, based on a per teacher unit of thirty-five pupils, was approximately $55,000 yearly.

CHAPTER III

INEQUALITIES IN EDUCATIONAL OPPORTUNITY

Inequalities in Financial Support

Surveys in the field of education usually present information as to the scope of public education, but few present data that point out the inequalities of educational opportunity between states or within a state. The problem confronting public education is to plan for teaching and learning activities so that each child, in every community, can achieve in proportion to his native ability.

Rural education is less effective in quality and quantity than urban or city school systems. A survey of rural conditions would probably show schoolhouses with few materials, insanitary toilet facilites, an impure water supply, and the teacher with a minimum of training. The Advisory Committee on Education [1] wrote:

> The school systems in the middle-sized cities are capable of much further improvement, but their great virtue lies in the fact that improvement is going on at a rather rapid rate. They have the necessary resources and enough autonomy for leadership to function. They may well continue to provide much of the educational leadership for America. Every effort should be made to encourage them to do so.
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> The school situation in the great metropolitan areas is often less satisfactory. Their wealthy and autonomous suburban areas have perhaps the finest public schools in the United States, but the large cities themselves present another picture. They unquestionably have the financial resources for good educational programs, and in many cases

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1. Report of the Advisory Committee on Education, U. S. Government Printing Office, Washington, 1938, pp. 8-9.

provide educational service at a high expenditure level. They suffer, however, from the chronic handicaps of mammoth urbanism. In all cases they adapt to changing conditions only at a slow rate. They have not yet found techniques by which to instill a progressive spirit throughout the entire personnel of centralized school systems, each as large as those of many whole nations in other parts of the world. In some cases they suffer from the most flagrant applications of the spoils system and other phases of corrupt political action.

The least satisfactory schools in the United States are now to be found for the most part in rural areas. The rural schools are better than they were formerly, but under present conditions there is no prespect that the rural areas will be able through their own resources to lessen the wide gap between rural and urban levels of educational service.

Contrast the rural situation with some modern schools in some progressive and prosperous towns or cities. The buildings are the best that money can purchase; the equipment and supplies are the best that science can produce; and the teachers have had four years of preparation, assisted by supervisors, nurses, and doctors in developing a truly educational program.

The differences between these two types of schools are largely measured by the amount of money spent for educational purposes. The Report of the Advisory Committee on Education[2] concludes:

The continued maintenance of large numbers of one-teacher rural schools with extremely small enrollments is responsible in many areas for both a low level of educational service and a high tax bill for the service that is provided. A study completed in 1934 records nearly 44,000 schools in which the attendance per school ranged from 3 to 17 pupils, and average costs per pupil ranged from $200 to $80, although

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2. Report of the Advisory Committee on Education, U. S. Government Printing Office, Washington, 1938, pp. 9-10.

the level of service provided was markedly inferior to that found in many town and village schools operating at cost levels around $40 per pupil in attendance.

When all schools move toward uniform standards, and the inequalities that exist between states and within a state are removed, then the public school system can assume its rightful place in training boys and girls.

Table 10 presents the first of these inequalities.

TABLE 10

A Comparison of the Amount of Wealth Per Child in Average Daily Attendance for Groups I and II (1942-1943)

Group I	Wealth[3]	A.D.A.[4]	Group II	Wealth	A.D.A.
A	$9,559,281	538	K	$7,689,445	358
B	174,179,173	5354	L	7,923,455	485
C	27,241,134	2541	M	5,995,380	468
D	12,334,348	1133	N	8,022,156	756
E	19,370,709	2146	O	5,219,924	821
F	8,098,153	972	P	9,116,409	600
G	29,543,247	2871	Q	6,706,902	560
H	15,131,321	902	R	6,380,709	333
I	18,920,306	1304	S	7,986,508	1615
J	24,883,919	1506	T	7,456,722	808
	$339,261,591	19267		$72,497,610	6804

There are marked differences between the different localities in the State with regard to their relative wealth. Table 10 shows the true wealth available for local taxation for the two groups, and the average daily attendance for 1942-1943. The amount of wealth per child in average daily attendance for Group I is $17,609, and for Group II it is

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3. Report of Virginia Education Commission, Division of Purchase and Printing, Richmond, 1944, Table 2.
4. Annual Report of the Superintendent of Public Instruction, Division of Purchase and Printing, Richmond, 1943, Table 49.

$10,655. A child in Group I has $6,954 more wealth supporting him than has a child in Group II. The above averages were found by dividing the total amount of wealth by the total average daily attendance. The total wealth of the two groups is $411,759,201, and Group I possesses eighty-two per cent of the total.

TABLE II

A Comparison of the Amount Raised from Local Sources and Effort Involved for Public Schools in Groups I and II for 1942-43

Group I	Amt. Raised[5]	Effort[6]	Group II	Amt. Raised	Effort
A	$54,200	.0059	K	$27,343	.0035
B	790,594	.0040	L	39,893	.0050
C	169,152	.0058	M	27,735	.0049
D	58,891	.0059	N	38,744	.0058
E	110,100	.0047	O	27,102	.0052
F	44,488	.0053	P	57,456	.0064
G	115,190	.0049	Q	31,908	.0045
H	104,696	.0070	R	24,241	.0036
I	77,958	.0038	S	55,973	.0066
J	129,726	.0039	T	51,992	.0069
	$1,654,995	.0051		$382,387	.0052

Effort is the amount received for education from local sources divided by the true value of locally taxable wealth.[7] Table 11 shows the amount raised from local sources and the amount of effort for each group. This table shows that the counties possessing less wealth are on the average putting forth a greater effort to support education than the counties with more wealth.

5. Annual Report of the Superintendent of Public Instruction, Division of Purchase and Printing, Richmond, 1943, Table 48.
6. Report of Virginia Education Commission, op. cit., Table 1.
7. Ibid.

Length of the School Day

The length of the school day is usually determined by the local board of education and may vary in different communities, due largely to transportation facilities, but the average length is approximately what it was years ago. In the course of time, many new subjects and activities have been added to the program without eliminating any of those already in the curriculum. Each new activity has taken its share of the total school day and, thus, has altered the relative proportion of time for all the subjects. The time devoted to each activity depends upon its value, but the result has been shorter periods throughout the school day.

In reply to question twenty-two in the questionnaire, it was found that the length of the school day varied from six hours and thirty minutes in Group I to five hours and thirty minutes in Group II. The average length of the school day in Group I was six hours and thirteen minutes and in Group II it was five hours and fifty minutes. The children in Group I received twenty-three minutes more per school day than the children in Group II. Estimated on a school year basis, a child in Group I got sixty-nine hours extra school activity, assuming that the child was present each day.

Period of Supervision

Supervision has only recently won recognition as a specialized phase of the educational program. It is recognized not only as a specialized field, but also as the foundation upon which all programs for the improvement of teaching must be built. One means of achieving professional growth and more efficient instruction for all teachers is through a good supervisory program. Burton's[8] definition of supervision includes five points: (a) improvement of the teaching act, (b) improving teachers in service, (c) selecting and organizing subject matter, (d) testing and measuring, (e) rating teachers. Any school system will continue to have young and inexperienced teachers coming into the system, and it is of the utmost importance that those teachers be given an opportunity to continue their training along lines indicated by Burton.

The replies to question nine in the questionaire revealed that the range of supervision in Group I was from thirty years to four years, and in Group II from twelve years to seven years. The average for Group I was sixteen years and for Group II nine years. If supervision is worth its price in aiding teachers and pupils, then the teachers and pupils in Group II have been deprived of seven years of helpful instruction; or in Group I the teachers have had seven years more to gain growth and experience along levels desired in good teaching.

8. William H. Burton, Supervision and the Improvement of Teaching, D. Appleton and Company, New York, 1922, pp. 9-10.

Cost of Instruction

TABLE 12

A Comparison of the Average Cost of Instruction Per Pupil in Average Daily Attendance for Groups I and II from 1938-43

Group I	Cost[9]	Group II	Cost
A	$32.81	K	$35.10
B	43.84	L	28.24
C	25.15	M	28.42
D	29.56	N	32.86
E	23.76	O	30.52
F	27.80	P	29.60
G	28.37	Q	24.64
H	35.93	R	28.11
I	30.55	S	25.20
J	42.18	T	33.28
Average	$32.00		$29.60

A comparison of the average cost of instruction per pupil in average daily attendance for the two groups is given in Table 12. Group I has spent $2.40 more per pupil during the five year period than Group II. By raising forty-eight cents per year for each child in average daily attendance, Group II could eliminate this inequality.

Table 13 presents a comparative study of salaries for groups I and II from 1938 to 1943.

9. Annual Report of the Superintendent of Public Instruction, op. cit., Tables 20, 19, 60, 61.

Elementary Salaries

TABLE 13

A Comparison of the Average Annual Salaries for Elementary Teachers in Groups I and II from 1938-1943

Group I	Average Salary[10]	Group II	Average Salary
A	$772	K	$800
B	1350	L	738
C	709	M	719
D	781	N	814
E	891	O	812
F	574	P	717
G	732	Q	627
H	858	R	717
I	837	S	614
J	1145	T	723
Average	$865		$728

Table 13 shows the average annual salaries for white elementary teachers in the two groups. Group I paid the teachers $137 more per year than Group II. Not a single county in Group II equaled or exceeded the average paid in Group I. The highest average salary paid and the lowest average salary paid are both found in Group I. Table 10 shows B to have the most wealth and F the least wealth in Group I.

A comparative study of school property is presented in Table 14.

10. Annual Report of the Superintendent of Public Instruction, op. cit., Tables, 17, 17, 17, 58, 60.

Value of School Property

TABLE 14

A Comparison of the Value of School Property in Groups I and II

Group I	Value[11]	Group II	Value
A	$361,000	K	$177,700
B	2,892,446	L	185,000
C	707,150	M	110,000
D	354,500	N	333,000
E	530,000	O	159,500
F	332,000	P	165,500
G	726,440	Q	197,000
H	387,650	R	118,000
I	641,350	S	356,133
J	681,000	T	213,000
Total	$7,613,536		$2,015,633

Table 14 shows the value of school property for the two groups. Based on the 1940 census, Group I has $198 of school property for each child of school age. Group II has $132 in school peroperty for each child of school age. The increase of Group I over Group II is $66. Based on average enrollment, Group I exceeds Group II by $127. The two groups possess $9,629,169 of school property. Of this amount, Group I has 79 per cent.

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11. Annual Report of the Superintendent of Public Instruction, op. cit., 1942-43, Table 78.

Per Cent of Teacher Turnover

The teacher primarily determines whether the school is efficient or inefficient. Reeder[12] says that the large turnover in employment among teachers is wasteful, and school boards should do everything possible to decrease it. Some of the chief causes are as follows: (a) low salaries when compared to other vocations, (b) political interference and similar conditions which teachers desire to avoid, (c) the dismissal of all women teachers who marry, and (d) employed for seventy-five per cent of the time.

It has been estimated that one-fifth of the teachers are new to their positions each year, and one-half of this number have had no experience. This turnover is much larger in the rural districts than in cities.[13]

Graves[14] says that apparently not more than fifty per cent of the teachers attain their potential maximum before leaving the profession, and only about twenty-five per cent reach it in a given position. School standards and the degree of professional skill and judgment suffer correspondingly.

In reply to question eighteen in the questionnaire, the superintendents in Group I reported approximately twenty-four per cent turnover in the past five years, and in Group II the percentage is twenty-five.

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12. Ward G. Reeder, School Boards and Superintendents, The Macmillan Company, New York 1944, pp. 236-237.
13. Ibid.
14. Frank P. Graves, The Administration of American Education, The Macmillan Company, New York, 1942, p. 215.

Public Interest in Education

TABLE 15

Number of Parent-Teacher Associations in Groups I and II[15]

Group I	No.	Members	Group II	No.	Members
A	3	88	K	3	85
B	23	5422	L	5	205
C	8	372	M	5	156
D	12	418	N	4	390
E	8	1203	O	4	350
F	5	237	P	4	262
G	9	619	Q	4	278
H	3	216	R	2	72
I	6	224	S	6	306
J	4	381	T	6	189
Average	8.2	918		4.3	229

The parent-teacher association is an organization offering a medium through which the school and the community can share responsibilities and establish desirable standards. Table 15 is presented to show that public interest is greater in Group I than in Group II. There is a parent enrolled in a parent-teacher association for every .045 per pupil enrolled in school in Group I and .03 in Group II.

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15. Annual Report of the Superintendent of Public Instruction, op. cit., Table 82.

Area of Counties

TABLE 16

A Comparison of the Area of Groups I and II in Square Miles

Group I	Area[16]	Group II	Area
A	285	K	258
B	31	L	130
C	557	M	146
D	496	N	252
E	345	O	204
F	584	P	205
G	814	Q	94
H	310	R	320
I	216	S	376
J	69	T	342
Average	371		233

Table 16 shows the size of each county in square miles and the average number of square miles for each group. The average per county for the State is 402.6 square miles. Four counties in Group I exceed the State average and no county in Group II equals the State average. County B in Group I is the smallest county in the State but Table 17 shows it to have the largest population. Counties H, I, and J in Group I and K, L, M, N, O, P, Q, and R in Group II are

16. Wilson Gee and John J. Corson, A Statistical Study of Virginia, The Institute for Research in the Social Sciences, University, Virginia, 1927.

double divisions; that is, one superintendent of schools serves two counties. Counties with a large population apparently achieve better educational results.

Population

TABLE 17

A Comparison of the Population and Median School Year Completed[17]

Group I	Pop.	Median	Group II	Pop.	Median
A	7088	6.6	K	7006	6.0
B	57040	12.3	L	8786	6.4
C	26048	6.5	M	6673	6.2
D	15861	5.4	N	9512	5.9
E	17738	8.1	O	6634	6.0
F	13398	5.6	P	10463	6.4
G	41271	6.0	Q	7149	7.1
H	15556	7.0	R	6954	5.8
I	11352	7.5	S	11967	6.7
J	9248	8.7	T	9020	6.5
Average	21460	7.4		8416	6.5

Table 17 shows the total population of the two groups and the average median years of school completed. There is an average of fifty-eight persons per square mile in Group I and thirty-six persons in Group II. Group I exceeds Group II by one and one-tenth school years completed. Statistics point to the fact that better educational results are obtained in the counties having the largest population.

Table 18 presents the number and kind of certificates held by teachers in Groups I and II.

17. Sixteenth Census of the United States, U. S. Department of Commerce, Washington, 1940, pp. 40-47.

Certification of Teachers

TABLE 18

A Comparison of the Number and Kind of Certificates Held by Elementary Teachers in Groups I and II for 1942-1943

	Group I								Group II						
	(CP)	(C)	(NP)	(Sp)	(E)	(PE)	(LP)		(CP)	(C)	(NP)	(Sp)	(E)	(PE)	(LP)
A	5	0	16	0	2	0	1	K	7	0	6	0	2	0	0
B	84	2	44	2	0	0	0	L	5	0	11	1	0	0	1
C	32	2	43	3	2	0	3	M	3	0	13	1	0	2	0
D	3	1	38	0	2	0	1	N	5	0	11	2	2	1	0
E	25	0	29	2	1	1	3	O	0	1	13	1	3	0	0
F	2	0	28	2	5	2	7	P	3	0	17	0	0	0	0
G	20	0	62	3	2	1	17	Q	2	0	15	0	0	0	3
H	29	0	8	0	0	0	0	R	3	0	8	0	2	0	0
I	6	0	39	0	0	1	2	S	15	1	34	0	0	0	11
J	17	0	30	0	0	0	0	T	10	0	22	0	1	0	0
	223	5	337	12	14	5	34		53	2	150	5	10	3	15

The figures in Table 18 were copied personally from the records of J. L. B. Buck, Director of Teacher Training, Richmond. Group I shows that thirty-five per cent of the teachers had Collegiate Professional Certificates, fifty-three per cent had Normal Professionals, and five per cent had Local Permits. Group II had twenty-two per cent with Collegiate Professionals, sixty-three per cent with Normal Professionals, and six per cent with Local Permits. These percentages show that the teachers in Group I have had more professional training than the teachers in Group II.

Summary

This chapter has presented data to show some of the possible causes of poor educational achievement. The following factors reveal inequalities between the two groups: (a) amount of wealth per child, (b) the amount of funds raised from local sources, (c) the effort involved in raising the funds, (d) the length of the school day, (e) the period of supervision, (f) the cost of instruction per pupil in average daily attendance, (g) the average annual salaries of teachers, (h) the value of school property, (e) the per cent of teacher turnover, (j) the number of parent-teacher assocations, (k) area and population, and (l) the certification of teachers.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Summary

Data have been presented to show that there are differences in educational opportunity among the counties within the State in their ability to support schools, in the facilities which they provide for education, and in cost burdens. Equalization of opportunity is based upon the assumption that these differences should be lessened, so that every child shall be entitled to opportunities comparable to those of any other child.

This is a comparative study of twenty Virginia counties based on a State-wide testing program in the seventh grade in December 1943. The tests given were the Stanford Achievement Test, Advanced Battery, Form D and the Otis Quick-Scoring Mental Ability Tests. The counties were selected on a grade level basis. The ten counties having the highest grade level compose Group I, and the ten counties having the lowest grade level compose Group II. Most of the data used in this study is taken from the Annual Reports of the Superintendent of Public Instruction from 1938-1943, and the Achievement of Virginia Pupils, a compilation of the above scores, by C. E. Myers.

Chapter II describes in detail the testing program in Virginia, and presents data to show the inequalities that

were discovered as a result of the testing program. The following significant facts are outstanding: (a) that the grade level ranges from 7.8 in Group I to 5.2 in Group II, a difference of two and one-half years, (b) that the median grade level for Group I is 7.2 and 5.67 for Group II, a difference of eighteen months, (c) that the chronological ages of the two groups are approximately the same, thirteen years and five months for Group I and thirteen years and four months for Group II, (d) a comparison of median grade level shows that Group I is superior to Group II in educational age by nineteen months, ability to interpret paragraph meaning of words by thirteen months, average reading ability by fourteen months, and average mental ability by twenty-three months.

Chapter III presents the data to indicate the possible causes of the poor achievement in Group II. The following significant inequalities were discovered: (a) that Group I has $6,954 more wealth per child in average daily attendance than Group II, (b) that children in Group I spend on an average twenty-three minutes longer in school each day, (c) that Group I puts forth a lesser effort to raise local funds for school purposes, (d) that the teachers and pupils in Group I have an average of seven years more of school supervision, (e) that Group I spends $2.40 more per pupil in average daily attendance, (f) that Group I pays its teachers an average of $137 more per year, (g) that the children in

Group I have an average of $127 more school property per child, (h) that public interest in education is more noticeable in Group I, (i) that the educational achievement is greater in counties with a more dense population, and (j) that the teachers in Group I are better prepared than those in Group II.

Conclusions

The following general conclusions seem to be justified on the basis of the data presented: (a) that the need for equalization is found because of the existence of inequalities in educational opportunities, due to inequalities in wealth, and inequalities of localities to support public education; therefore, it appears that the fundamental inequalities in education in Virginia are found in the unequal distribution of wealth, (b) that the counties paying the highest salaries have better prepared teachers, (c) that the average expenditure for public education in counties of average wealth are considerably higher than the average expenditure in less able counties, (d) that the children who live in Group I, or in similar groups, are blessed with educational opportunities when compared with Group II, and (e) that the density of population is a determining factor in educational achievement.

Studies have been made in recent years which seem to verify some of the above conclusions. It is generally accepted that total state-wide support of public education would eliminate some of the inequalities in opportunities within the state. Strayer and Haig[1] support this idea as follows:

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1. George D. Strayer and Robert Murray Haig, The Financing of Education in the State of New York, The Macmillan Company, 1923, p. 174.

"The principle of equality of educational opportunity, followed to its logical conclusion, is found to arrive at the equivalent of a state educational system, which requires a satisfactory state-wide minimum offering supported by taxes of uniform weight in relation to taxpaying ability throughout the state."

Updegraff,[2] in supporting state controlled schools, says, "The purpose of state aid should be not only to protect the state from ignorance, to provide intelligent workers in every field of activity, and to educate leaders, but also to guarantee to each child, irrespective of where he happens to live, equal opportunity to that of any other child for the education which will best fit him for life."

Miles,[3] in a study of school district organization in Ohio, concludes that:

"The small district system is responsible for extreme differences in the wealth behind the rural and village schools."

Swift[4] is very emphatic in condemning the small school unit.

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2. Harlan Updegraff, Financial Support, Rural School Survey of New York State, William F. Fell Company, Ithaca, New York, 1922, p. 115.
3. R. E. Miles, The Problem of Rural and Village School District Organization in Ohio, The Ohio Institute, Columbus, Ohio, 1930, p. 2.
4. F. H. Swift, Federal and State Aid to Public Schools, United States Bureau of Education Bulletin No. 4, 1922, p. 103.

> The evils of the district system and the impossibility of ever equalizing school revenues, educational opportunities, and school burdens, as long as the district or any other similar small unit is maintained as the controlling source of school revenue, have been pointed out by every leading authority on the organization and support of public schools. These leaders have been unanimous in their condemnation of the district system and in their support of a larger school unit.

Cavins,[5] in the Survey of Education in West Virginia, approaches the problem of determining a minimum program through the analysis of test results. These test results show that the children in the rural schools are from a year and a half to two years behind the children in the city and consolidated schools. He says, "We have analyzed the results sufficiently to see that the factors that have produced the better results are consolidation, longer school terms, better attendance, better teachers, better equipment, and better supervision."

This study is not presented to show that equal educational opportunities are absolute. An equalization program involves many factors. There are practical difficulties which make it impossible to attempt equalization to secure identical conditions for all children. Therefore, the aim should be to remove the most extreme conditions.

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5. Lorimer C. Cavins, Organization, Administration, and Finance, Survey of Education in West Virginia, 1928, pp. 310-311.

BIBLIOGRAPHY

1. Abelson, Harold H., The Art of Educational Research, World Book Company, New York, 1933.

2. Ayres, L. P., An Index Number for State School Systems, The Russell Sage Foundation, New York, 1920.

3. Baker, Harry J. and Traphagen, Virginia, The Diagnosis and Treatment of Behavior-Problem Children, The Macmillan Company, New York, 1935.

4. Bursch, James F., Factors Associated with Non-Attendance, Bulletin of the Department of Secondary School Principals, March, 1936.

5. Burton, William H., Supervision and the Improvement of Teaching, D. Appleton and Company, New York, 1922.

6. Cavins, Lorimer V., Organization, Administration, and Finance, West Virginia Department of Education, Charleston, 1928.

7. Gee, Wilson and Corson, John J., A Statistical Study of Virginia, The Institute for Research in the Social Sciences, University, Virginia, 1927.

8. Good, Carter V., Barr, A. S., and Scates, Douglas E., Methodology of Education Research, D. Appleton-Century Company, New York, 1936.

9. Graves, Frank P., The Administration of American Education, The Macmillan Company, New York, 1932.

10. Inglis, Alexander J., Virginia School Survey, Everett Waddey Company, Richmond, 1919.

11. Kelley, Truman Lee, Interpretation of Educational Measurements, World Book Company, New York, 1927.

12. Madsen, I. N., A Teachers' Guide for the Use of Standard Tests, Published by the Author, 1925.

13. Miles, R. E., The Problem of Rural and Village School District Organization in Ohio, The Ohio Institute, Columbus, Ohio, 1930.

14. Moehlman, Arthur B., School Administration, Houghton Mifflin Company, New York, 1940.

15. Mort, Paul R., State Support for Public Education, The American Council on Education, Washington, 1933.

16. Myers, Charles E., Achievement of Virginia Pupils, State Board of Education, Richmond, 1943.

17. O'Shea, M.V., Public Education in Virginia, Davis Bottom Company, Richmond, 1928.

18. Otis, Arthur S., Statistical Method in Educational Measurement, World Book Company, New York, 1925.

19. Reeder, Ward G., School Boards and Superintendents, The Macmillan Company, New York, 1944.

20. Sandiford, Peter, Comparative Education, E. P. Dutton and Company, New York, 1918.

21. Strayer, George D. and Haig, Robert M., The Financing of Education in the State of New York, The Macmillan Company, New York, 1923.

22. Swift, F. H., Federal and State Aid to Public Schools, U. S. Bureau of Education, Bulletin No. 4, Washington, 1922.

23. Updegraff, Harlan, Financial Support, Rural School Survey of New York State, William Fell Company, Ithaca, 1922.

24. Annual Reports of the Superintendent of Public Instruction, Division of Purchase and Printing, Richmond, 1938-43.

25. Report of the Advisory Committee on Education, U. S. Government Printing Office, Washington, 1938.

26. Report of Virginia Education Commission, Division of Purchase and Printing, Richmond, 1944.

27. Sixteenth Census of the United States, U. S. Department of Commerce, Washington, 1940.

APPENDIX

QUESTIONNAIRE

1. Name_____ 2. County_____
3. How long have you been superintendent? _____years.
4. How long have you been in school work? _____years.
5. Where did you do your undergraduate work? _____.
6. Where did you do your graduate work? _____.
7. How many white elementary teachers in your county?_____.
8. How many white elementary supervisors in your county? _____.
9. How long have you had white elementary supervisors? ___ years.
10. Is the compulsory school law strictly enforced? Yes___ No___.
11. At what age are children permitted to enter school? Six or Seven.
12. Are promotions based on a semester or yearly basis?_____.
13. Do you have group or individual promotions?_____.
14. How many one-room schhols in your county?_____.
15. How many two-room schools?_____.
16. How many three-room schools?_____.
17. How many schools have been eliminated by consolidation in the past five years?_____.
18. Approximately what has been the percentage of teacher turnover in the past five years?_____.
19. Are teachers required to make home visitations?_____.
20. Are pupils required to spend two or more years in any one grade if they are not promoted?_____.

21. Are your libraries adequate for the elementary schools?

_____.

22. What is the length of your school day?_____.

23. In what grade are children required to be in school for full day? first____second____third____.

24. Are all children required to have textbooks? Yes___No___.

25. Would you classify your school system progressive_____, conservative_____, or traditional_____?

VITA

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